

ABSTRACT

The invention encompasses improved selective polyamides for binding to specific nucleotide sequences of double stranded DNA as well as methods for designing and synthesizing polyamide DNA binding ligands that are selective for an identified specific nucleotide sequence. The 3-hydroxy-N-methylpyrrole/N-methylpyrrole carboxamide pair specifically recognizes the T•A base pair, while the N-methylpyrrole/3-hydroxy-N-methylpyrrole pair recognizes A•T nucleotide pairs. Similarly, an N-methylimidazole/N-methylpyrrole carboxamide pair specifically recognizes the G•C nucleotide pair, and the N-methylpyrrole/N-methylimidazole carboxamide pair recognizes the C•G nucleotide pair.

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